

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

MYCLERK LLC,

Plaintiff(s),

v.

IMPINJ INC,

Defendant(s).

CASE NO. 2:21-cv-00049-TL

CLAIM CONSTRUCTION ORDER

This matter is before the Court to construe certain claim terms of the patent-in-suit in this case. Having considered the Parties' respective briefing and related appendix, the Parties' oral arguments at the Markman hearing, and the relevant record, the Court hereby enters the following order.

I. BACKGROUND

Plaintiff MyClerk LLC accuses Defendant Impinj, Inc. of direct and indirect infringement of U.S. Patent 10,133,888 (“’888 Patent”).¹ Dkt. No. 1 ¶¶ 9–40. Defendant brings a counterclaim, seeking a declaratory judgment of non-infringement and invalidity of the ’888 Patent. Dkt. No. 16 at 6–7.

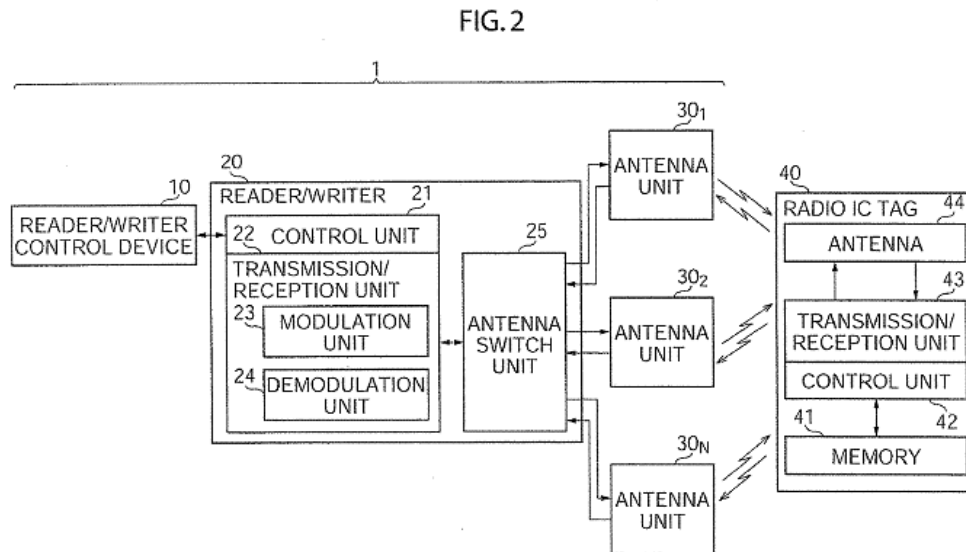
A. The ’888 Patent

The ’888 Patent was filed on September 28, 2006, and ultimately issued on November 20, 2018. ’888 Patent at 1. Titled “Data Reader and Positioning System,” the ’888 Patent discloses a system that uses radio waves for reading information from and determining the position of one or more storage mediums, such as a Radio Frequency Identification (“RFID”) tag or a radio IC tag. *Id.* 1:16–20. Such a system might be found, for example, in a library or clothing store for tracking and managing inventory. Dkt. No. 40 at 2 (Parties’ tutorial slides).

Specifically, the ’888 Patent discloses a data reader and positioning system that is intended to evade dead spots, which occur when the direct and reflected radio waves (including waves from different antennas) collide and interfere with each other, making it difficult or impossible to read data. ’888 Patent 1:32–47; *see also* Dkt. No. 40 at 9–12. The ’888 Patent seeks to resolve this issue with a number of different features, for example by controlling the radiation characteristics of each antenna unit (*e.g.*, the beam direction or width), changing the direction of the radio waves radiated from the antenna units, or changing the phase of a carrier wave. *See, e.g.*, ’888 Patent 1:59–2:46, 2:62–3:16; *see also* Dkt. No. 1 at 4–6 (describing ’888 Patent). Through these features, the ’888 Patent allows for the reading of a storage medium and designating its position with minimal dead spots. *See, e.g.*, ’888 Patent 3:52–4:15.

¹ The ’888 Patent is found at Dkt. No. 39-1.

The system disclosed by the '888 Patent is comprised of various components, such as a reader/writer control device, a control unit, an antenna switch unit, and antenna units, as shown by this diagram:



'888 Patent fig.2; *see also id.* at 1 (diagram used with the Abstract of '888 Patent). Overall, the '888 Patent contains five examples, or "embodiments," of the disclosed invention and 28 accompanying figures as demonstratives.

Claims, 1, 4, 7, and 10 of the '888 Patent are independent claims and contain the following identical language, which includes the Parties' disputed language:

A positioning system, comprising:

a plurality of antenna units mounted in different places to read data from storage mediums each having a storage unit for storing data and a communicating antenna for transmission of the data stored in the storage unit, by using radio waves having different polarization directions;

a control unit connected to each antenna unit, for controlling each antenna unit to sequentially change radiation characteristics of each antenna unit;

1 *an antenna switch unit for selectively driving the antenna units in*
 2 *accordance with a control instruction from the control unit to*
 3 *transmit the radio wave having desired polarization directions*
 4 *according to each antenna unit by switching the antenna units*

5 *See, e.g., '888 Patent Claim 1 (emphasis added). The specific disputed language is summarized*
 6 *further below.*

7 **B. Procedural History**

8 Plaintiff initiated the present action in the District of Delaware in November 2020. Dkt.
 9 No. 1. This case was transferred to this District in January 2021. Dkt. No. 11.

10 Parties submitted their joint claim construction briefing on June 3, 2022 (“Joint Brief”)
 11 (Dkt. No. 39),² held a tutorial for the Court on the relevant technical terms of the ’888 Patent on
 12 June 14 (Dkt. No. 41), and participated in a claim construction hearing (“Markman Hearing”) on
 13 June 29 (Dkt. No. 42). The Parties’ claim construction arguments are now fully submitted before
 14 the Court for its consideration.

15 **II. LEGAL STANDARD**

16 A patent is primarily comprised of: (1) the specification, describing the invention “in
 17 such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make
 18 and use the same”; and (2) one or more claims, “particularly pointing out and distinctly claiming
 19 the subject matter [that] the applicant regards as his invention.” 35 U.S.C. § 112. Importantly,
 20 though the claims are technically a part of the specification, it is the claims that “define the
 21 invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d
 22 1303, 1312 (Fed. Cir. 2005) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys.,*
 23 *Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)).

24 ² Citations to page numbers of the Joint Brief and any other case filings in this Order conform to the printed ECF
 page numbers at the top of each page, rather than the page numbers printed at the bottom.

1 A patent infringement analysis proceeds in two steps: (1) claim construction; and (2) the
2 determination of infringement. *See, e.g., Innova/Pure Water, Inc.*, 381 F.3d at 1115. “The
3 purpose of claim construction is to ‘determin[e] the meaning and scope of the patent claims
4 asserted to be infringed.’” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351,
5 1360 (Fed. Cir. 2008) (alteration in original) (quoting *Markman v. Westview Instruments, Inc.*,
6 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996)). While the ultimate
7 issue of infringement may be determined by a jury, claim construction is a question of law and
8 squarely within the court’s domain. *Markman*, 52 F.3d at 979 (“[T]he court has the power and
9 obligation to construe as a matter of law the meaning of language used in the patent claim.”).
10 Importantly, “[w]hen the parties present a fundamental dispute regarding the scope of a claim
11 term, it is the court’s duty to resolve it” even if the term has a “well-understood definition.” *O2*
12 *Micro Int’l Ltd.*, 521 F.3d at 1362–63 (finding district court erred in declining to construe the
13 disputed term “only if”).

14 In claim construction, a court generally gives the words of a claim their ordinary and
15 customary meaning, as understood by a person of ordinary skill in the art in question
16 (“POSITA”) at the time of the invention (*i.e.*, as of the effective filing date of the patent
17 application). *Phillips*, 415 F.3d at 1312–13. This “starting point” of claim construction is based
18 on “the well-settled understanding that inventors are typically persons skilled in the field of the
19 invention and that patents are addressed to and intended to be read by others of skill in the
20 pertinent art.” *Id.* at 1313. Where “the ordinary meaning of claim language as understood by a
21 [POSITA] may be readily apparent[,] . . . claim construction in such cases involves little more
22 than the application of the widely accepted meaning of commonly understood words.” *Id.*

23 There are two exceptions to this general rule. A patentee must: (1) “act[] as his own
24 lexicographer” by clearly setting forth a different definition of the claim term in question; or

(2) “disavow[] the full scope of a claim term either in the specification or during prosecution,” by making it clear that the invention at question does not include a particular feature. *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). In acting as a “lexicographer,” “[i]t is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments[;] the patentee must ‘clearly express an intent’ to redefine the term.” *Id.* 1365–66 (“It is . . . not enough that the only embodiments, or all of the embodiments, contain a particular limitation.”). “The standard for disavowal of claim scope is similarly exacting.” *Id.* at 1366. In short, inferences drawn from the specification generally do not suffice to replace the customary and ordinary meaning of a claim term.

In engaging in claim construction, a court primarily relies on the claims themselves and the specification of the patent at issue. This is because a POSITA is presumed to read a claim term “in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313. Therefore, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316 (quoting *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). The court may also look to the prosecution history of a patent, as it “can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution” *Id.* at 1317. Together, the claims, specification, and prosecution history of a patent constitute the “intrinsic evidence” on which the construing court primarily relies. *See, e.g., Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record”).

Courts may also consider “extrinsic evidence,” such as expert testimony, dictionaries, and treatises, in claim construction. “In most situations, [however,] an analysis of the intrinsic

evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.” *Sumitomo Dainippon Pharma Co. v. Emcure Pharms. Ltd.*, 887 F.3d 1153, 1160 (Fed. Cir. 2018) (quoting *Vitronics Corp.*, 90 F.3d at 1583); *see also Phillips*, 415 F.3d at 1318 (“We have viewed extrinsic evidence in general as less reliable than the patent and its prosecution history in determining how to read claim terms.”).

III. DISCUSSION

The Parties dispute the following three claim terms (the “Disputed Terms”), which are all found in Claims 1, 4, 7, and 10 of the ’888 Patent:

<u>Disputed Term</u>	<u>Plaintiff’s Construction</u>	<u>Defendant’s Construction³</u> (changes in italics)
Disputed Term 1: “a control unit connected to each antenna unit, for controlling each antenna unit to sequentially change radiation characteristics of each antenna unit”	No claim construction is necessary, as the plain and ordinary meaning is clear.	“a <i>single</i> control unit connected to <i>the plurality of antenna units</i> , the control unit controlling each antenna unit to sequentially change radiation characteristics of each antenna unit”
Disputed Term 2: “an antenna switch unit for selectively driving the antenna units in accordance with a control instruction from the control unit to transmit the radio wave having desired polarization directions according to each antenna unit by switching the antenna units”	No claim construction is necessary, as the plain and ordinary meaning is clear.	“a <i>single</i> antenna switch unit <i>for the plurality of antenna units</i> for selectively driving the antenna units in accordance with a control instruction from the control unit to transmit the radio wave having desired polarization directions according to each antenna unit by switching the antenna units”

³ Defendant has withdrawn its alternative argument that Disputed Terms 1 and 2 are indefinite. *See* Joint Brief at 12 n.2, 31 n.7.

Disputed Term 3: “an antenna switch unit”	No claim construction is necessary, as the plain and ordinary meaning is clear.	<i>“a switch that selectively connects and disconnects an antenna unit from the control unit”</i>
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The Parties assert numerous arguments regarding the construction of these Disputed Terms, many of which seemingly amount to a debate of semantics or misunderstandings of each other’s arguments. The crux of the Parties’ positions is as follows: Defendant argues that the claims must be construed in such a way that requires the existence of at least one control unit that is connected to at least one antenna switch unit, which in turn is connected to a plurality of⁴ antenna units. *See* Joint Brief at 18. Defendant also argues that an antenna switch unit must be able to serve the function of disconnecting antenna units. Joint Brief at 55, 56. Plaintiff, in turn, argues that no claim construction by the Court is necessary and that Defendant improperly attempts to impose limitations on the claims. *See* Joint Brief at 12–13, 35–36, 53–55.

The Parties, however, agree on much of the substance. As was made clear during the Markman Hearing, the Parties do not dispute the following:

- The ’888 Patent requires the existence of an antenna switch unit.
- The ’888 Patent requires a plurality of antenna units.
- The ’888 Patent requires a one-to-many relationship between an antenna switch unit and a plurality of antenna units.
- The ’888 Patent requires that an antenna switch unit receive a control instruction that is ultimately from a control unit, though there may be intervening components between the antenna switch unit and control unit.

⁴ “The phrase ‘a plurality of’ means ‘at least two of.’” *SIMO Holdings Inc. v. Hong Kong uCloudlink Network Tech. Ltd.*, 983 F.3d 1367, 1377 (Fed. Cir. 2021).

- 1 • The '888 Patent does not require that there be *only one* control unit.
- 2 • The '888 Patent does not require that there be *only one* antenna switch unit.

3 During the Markman Hearing, Defendant argued that these undisputed points lead to the
4 logical conclusion that the claims at issue require the existence of (at least) one control unit that
5 is connected to (at least) one antenna switch unit, which in turn is connected to a plurality of
6 antenna units. Plaintiff, however, objected to this characterization at the Markman Hearing. The
7 Parties also continue to dispute the scope of the term, “antenna switch unit.”

8 Given that a dispute over claim construction remains, the Court now proceeds to engage
9 in the analysis of each of the Disputed Terms. Because the construction of Disputed Term 1
10 relies on the construction of Disputed Term 2, which in turn relies on the construction of
11 Disputed Term 3, the Court discusses the three terms in the reverse order of the Parties’ briefing
12 for the sake of logical clarity.

13 **A. Disputed Term 3**

14 Parties dispute the scope of Disputed Term 3, “an antenna switch unit.” Defendant seeks
15 to construe Disputed Term 3 as follows: “a switch that selectively connects and disconnects an
16 antenna unit from the control unit.” Joint Brief at 53. Defendant argues that a POSITA at the
17 time of the '888 Patent would have understood the antenna switch unit the same way an “antenna
18 switch” is defined in the 1974 edition of the Radio Shack Dictionary of Electronics: “a switch
19 used for connecting an antenna to or disconnecting it from a circuit.” Joint Brief at 56; Dkt. No.
20 39-1 at 107 (scan of the dictionary entry).

21 Plaintiff argues that no construction of Disputed Term 3 is needed and that Defendant’s
22 construction would improperly add a limitation into the claims—namely, that an antenna switch
23 unit must be able to “disconnect” an antenna unit from the control unit. *See* Joint Brief at 53–55.
24 The Court agrees.

1 First, nothing in the intrinsic evidence of the '888 Patent provides that an antenna switch
 2 unit must be able to “disconnect” an antenna unit. In identical language, Claims 1, 4, 7, and 10
 3 reads, in relevant part:

4 an antenna switch unit for selectively driving the antenna units in
 5 accordance with a control instruction from the control unit to
 6 transmit the radio wave having desired polarization directions
 according to each antenna unit by switching the antenna units⁵

7 Thus, the claims provide for various functions of an antenna switch unit as well as its
 8 relationship to other components (*i.e.*, the control unit and the antenna units), but they do not
 9 reference the antenna switch unit’s ability to disconnect antenna units from a control unit.

10 The specification, which provides further details about the antenna switch unit, does not
 11 change this analysis. For example:

- 12 • “the antenna switch unit *selectively connects [a plurality of] antenna units* to the
 13 transmission/reception unit under the control of the control unit, and
communicates data with the radio IC tag using the desired antenna unit”;
- 14 • “[t]he control unit transmits a switch instruction to the antenna switch unit to
selectively drive the antenna units”; and
- 15 • “[the] antennas are *provided with modulated carrier waves selectively by the*
antenna switch unit.”

16 '888 Patent 8:13–20, 16:13–15, 16:56–57 (emphasis added and citations to Figures 2 and 16
 17 omitted). Thus, the specification further explains the functions of an antenna switch unit—
 18 including the selective “connecting” of antenna units—and its relationship with the control unit
 19 and antenna units. But again, there is no reference to an antenna switch unit’s ability or need to
 20 *disconnect* an antenna unit. The prosecution history sheds no further light on this issue. *See, e.g.*,
 21 Dkt. No. 39-1 at 54–55 (emphasizing, among others, the function of the antenna switch unit in
 22

24 ⁵ This is also Disputed Term 2, which is examined for other purposes later in this Order.

1 “selectively driving the antenna units” to sequentially change the radiation characteristics of
2 antenna units).

3 Second, Defendant’s proposed construction of “an antenna switch unit” is potentially
4 misleading and must be rejected on that basis alone. Defendant clarified at the Markman Hearing
5 that its construction is only intended to emphasize that an antenna switch unit must *at least* be
6 able to connect and disconnect an antenna unit, but the proposed construction on its face seems
7 to imply that an antenna switch unit’s primary and perhaps *only* function is to “selectively
8 connect[] and disconnect[] an antenna unit from the control unit.” Defendant’s proposed
9 construction would therefore only introduce confusion into the claim language.

10 Third, Defendant argues that the ’888 Patent fails to define an antenna switch unit
11 because “[t]he claims recite what the antenna switch unit does . . . but not what an antenna
12 switch unit is.” Joint Brief at 56. Defendant’s argument is almost nonsensical, given that
13 Defendant’s own proposed definition also describes what an antenna switch unit *does*—
14 connecting and disconnecting an antenna unit. Also, the claims and specification describe not
15 only the antenna switch unit’s function but its relationship to other components of the disclosed
16 invention—and Defendant does not explain what more is required to show “what an antenna
17 switch unit is,” much less why a different definition (and a new, additional function) pulled from
18 an extrinsic source is required. *See Vitronics*, 90 F.3d at 1584 (“[E]xtrinsic evidence in general
19 . . . may be used only to help the court come to the proper understanding of the claims; it may not
20 be used to vary or contradict the claim language.”). Defendant argues that the ’888 *Patent* is
21 consistent with the *dictionary* (Joint Brief at 57), but this only turns claim construction on its
22 head.

1 Indeed, in *Phillips v. AWH Corp.*, an *en banc* panel of the Federal Circuit acknowledged
2 the potential usefulness of extrinsic evidence in claim construction⁶ but rejected reliance on
3 dictionaries over the words of the claims and specification themselves. *See* 415 F.3d at 1314,
4 1318, 1320–21 (rejecting reliance on dictionaries and other extrinsic evidence in *Texas Digital*
5 *Sys, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002)). In doing so, the Federal Circuit
6 cautioned that extrinsic evidence is generally less reliable than the intrinsic evidence, especially
7 given “a virtually unbounded universe of potential extrinsic evidence of some marginal relevance
8 that could be brought to bear on any claim construction question.” *Id.* at 1318.

9 The 1974 edition of the Radio Shack Dictionary appears to be one such “extrinsic
10 evidence of some marginal relevance.” Defendant does not cite to, and could not provide when
11 asked, a single Federal Circuit case relying on the Radio Shack Dictionary for claim
12 construction—nor is the Court aware of any.⁷ Defendant also does not explain why a POSITA in
13 2006—the filing date of the ’888 Patent—would have understood a technological term as it was
14 defined over 30 years prior, in 1974. Indeed, the ’888 Patent itself refers to the “development of
15 the *recent* radio communication technology and information processing technology” (’888 Patent
16 1:22–23 (emphasis added)), which only underscores how unhelpful—and even perhaps
17 misleading—this outdated definition might be. Therefore, the Court declines to consider the
18 Radio Shack Dictionary definition in construing Disputed Term 3.

19 In short, the ’888 Patent is clear as to the scope of an “antenna switch unit.” Defendant’s
20 attempt to modify the function and definition of an antenna switch unit is unpersuasive and
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22 ⁶ Defendant cites to this language but ignores the remainder of the *Phillips* discussion. Joint Brief at 56–57 (citing
23 *Phillips*, 415 F.3d at 1314).

24 ⁷ The Court is only aware of one federal case citing to the Radio Shack Dictionary: In *Hochstein v. Microsoft Corp.*,
a special master cited to the dictionary during claim construction, but the district court ultimately held that
consideration of extrinsic evidence had been in error. *See* 730 F. Supp. 2d 714, 726–27 (E.D. Mich. 2010).

1 unsupported, and Defendant has also failed to show any real dispute regarding the reading of
2 Disputed Term 3. Accordingly, the Court finds that the plain and ordinary meaning of Disputed
3 Term 3 is clear and declines to adopt Defendant's proposed construction of Disputed Term 3 or
4 to find that an antenna switch unit must be able to disconnect antenna units from the control unit.

5 **B. Disputed Term 2**

6 Having thus defined what an antenna switch unit is, the Court now moves to examining
7 the relationship between an antenna switch unit and antenna units. Disputed Term 2, which is
8 found in Claims 1, 4, 7, and 10, reads:

9 an antenna switch unit for selectively driving the antenna units in
10 accordance with a control instruction from the control unit to
11 transmit the radio wave having desired polarization directions
12 according to each antenna unit by switching the antenna units

13 *See, e.g., '888 Patent 28:53–57 (Claim 1).*

14 Defendant seeks to construe Disputed Term 2 as: “a *single* antenna switch unit *for the*
15 *plurality of antenna units* for selectively driving the antenna units in accordance with a control
16 instruction from the control unit to transmit the radio wave having desired polarization directions
17 according to each antenna unit by switching the antenna units.” Joint Brief at 35 (emphasis
18 added); *see also id.* at 39 (an antenna switch unit must be connected to a plurality of antenna
19 units). Plaintiff argues that no claim construction of Disputed Term 2 is necessary, as the plain
20 and ordinary meaning of the term is clear. Joint Brief at 35–36.

21 Plaintiff also argued, in its briefing, that the '888 Patent permits an antenna switch unit to
22 be connected to just one antenna unit (Joint Brief at 47–48), but the Parties agreed at the
23 Markman Hearing that the '888 Patent requires the presence of at least one antenna switch unit
24

1 and that an antenna switch unit must be connected to a plurality of antenna units.⁸ As a result, the
2 Parties seemingly agree on the substance of the dispute—specifically, the one-to-many
3 relationship between an antenna switch unit and the antenna units in the claims of the ’888
4 Patent—but, for the sake of clarity and for the avoidance of doubt, the Court briefly examines
5 each of Defendant’s two proposed modifications to Disputed Term 2 and finds both unnecessary
6 and unavailing.

7 **1. The use of “a single” in place of “an”**

8 First, Defendant proposes to add the word “single” into Disputed Term 2: “a *single*
9 antenna switch unit” Plaintiff vigorously contests Defendant’s construction for adding a
10 new limitation to the claims: that there must be *only* one antenna switch unit in the disclosed
11 invention. *See, e.g.*, Joint Brief at 36. Defendant insists that it does not seek to limit the claims to
12 a system with only one antenna switch unit. *See* Joint Brief at 44 (“[T]he claims are silent as to
13 the existence of additional antenna switch units. . . .”).

14 The Federal Circuit has “repeatedly emphasized that an indefinite article ‘a’ or ‘an’ in
15 patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the
16 transitional phrase ‘comprising.’” *Convolve, Inc. v. Compaq Comput. Corp.*, 812 F.3d 1313,
17 1321 (Fed. Cir. 2016) (quoting *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed.
18 Cir. 2000)). Here, Disputed Term 2 reads, in each of Claims 1, 4, 7, and 10 of the ’888 Patent:
19 “A positioning system, comprising: . . . an antenna switch unit for selectively driving” *See*,
20 *e.g.*, ’888 Patent 28:42–53. As written, therefore, Disputed Term 2 makes it clear that one or
21 more antenna switch units are required, and the Parties do not dispute this requirement.

22
23
24 ⁸ In any case, for reasons explained in this Order, the claims require a one-to-many relationship between an antenna switch unit and antenna units.

1 Defendant's proposed construction, however, is potentially misleading and does not
2 reflect this mutual understanding. The use of the words "a single" implies, without the benefit of
3 Defendant's added explanation, that the claims require the presence of *only one* antenna switch
4 unit. While Defendant argued at the Markman Hearing that patent claims do not preclude the
5 existence of additional components, Plaintiff's concern is not unfounded: It is possible for a
6 patent to disclaim this presumption and require that only one of a certain component (here, an
7 antenna switch unit) exist in the invention. *See, e.g., Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019,
8 1022–24, 1027 (Fed. Cir. 1997) (claim language limited the invention to "a single gas-confining
9 chamber"); *see also KCJ Corp.*, 223 F.3d at 1356 ("[A patent] may disclaim . . . a plural
10 interpretation and thus lose the benefit of the customary meaning of indefinite articles in patent
11 claims."). Defendant's construction comes dangerously close to introducing such a limitation,
12 however unintentionally, and therefore must be rejected.

13 2. The use of "for the plurality of" in place of "the"

14 Second, Defendant also seeks to add the following italicized phrase: "an antenna switch
15 unit *for the plurality of antenna units* for selectively driving the antenna units" In short,
16 Defendant seeks to ensure that Disputed Term 2 requires a one-to-many relationship between an
17 antenna switch unit and a plurality of antenna units. Plaintiff does not contest the one-to-many
18 relationship but essentially argues that the claim language as originally written is sufficient. The
19 Court agrees.

20 Defendant's construction is unnecessary and superfluous, as the claims are clear in
21 requiring the one-to-many relationship between an antenna switch unit and antenna units. Each
22 of the claims at issue require "a plurality of antenna units" as well as "an antenna switch unit for
23 selectively driving *the antenna units* . . . by switching *the antenna units*." '888 Patent, Claims 1,
24 4, 7, and 10 (emphasis added). Thus, the claims clearly require "a plurality of antenna units."

1 Then, “an antenna switch unit,” written in the singular form, is linked to “the antenna units,”
2 which is not only grammatically plural on its own but also refers back to the grammatical
3 antecedent of “a plurality of antenna units” within each claim. The word “selectively” also
4 implies *selection*—that is, a choice between more than one—and yet again proves the one-to-
5 many relationship between an antenna switch unit and antenna units. Notably, the language of
6 Disputed Term 2 is differently drafted from that of Disputed Term 1 (“a control unit connected to
7 each antenna unit”), which does not contain the same grammatical markers of a one-to-many
8 relationship. *See Phillips*, 415 F.3d at 1314 (“Differences among claims can also be a useful
9 guide in understanding the meaning of particular claim terms.”). Thus, the plain and ordinary
10 meaning of the claims requires that an antenna switch unit be connected to a plurality of antenna
11 units, and no further clarification is required.

12 Rather than showing any clear re-defining or disavowal, the specification and prosecution
13 history are consistent with this plain reading. For example, every instance that the specification
14 refers to an antenna switch unit appears to be in the context of one antenna switch unit
15 interfacing with a plurality of antenna units. *See, e.g.*, ’888 Patent 8:11–29, 15:64–16:21; figs.2,
16 16. This reinforces that the claims require a plurality of antenna units and at least one antenna
17 switch unit, which the Parties do not dispute.

18 Accordingly, the Court finds that the plain and ordinary meaning of Disputed Term 2 is
19 sufficient and requires at least one antenna switch unit that is connected to a plurality of antenna
20 units.

21 **C. Disputed Term 1**

22 Having established the basic functions of an antenna switch unit and its relationship to
23 antenna units, the Court now turns to the relationship of a control unit in relation to the antenna
24

1 switch unit and antenna units in the claims at issue. Disputed Term 1, which is found in Claims
2 1, 4, 7, and 10, reads:

3 a control unit connected to each antenna unit, for controlling each
4 antenna unit to sequentially change radiation characteristics of
each antenna unit

5 *See, e.g.,* '888 Patent 28:50–52 (Claim 1).

6 Defendant seeks to construe Disputed Term 1 as: “*a single* control unit connected to *the*
7 *plurality of antenna units, the control unit* controlling each antenna unit to sequentially change
8 radiation characteristics of each antenna unit.” Joint Brief at 12 (emphasis added). Plaintiff
9 argues that no claim construction of Disputed Term 1 is necessary, that Defendant adds a new
10 restriction to the '888 Patent in requiring *only* one control unit, and that the claims and
11 specification (including the various embodiments) do not require the existence of a one-to-many
12 relationship between a control unit and antenna units. Joint Brief at 8–11.

13 Defendant yet again explains that it does not seek to require that there be *only one* control
14 unit, but that there be at least one control unit that is connected to a plurality of antenna units.
15 Joint Brief at 15, 30–31. But for the same reasons as with Disputed Term 2, Defendant’s addition
16 of the words “a single” in its construction of Disputed Term 1 is potentially misleading and must
17 be rejected.

18 At the Markman Hearing, Defendant also argued that, because (1) an antenna switch unit
19 must be connected to a control unit (as explained below) and (2) an antenna switch unit must be
20 connected to a plurality of antenna units (as discussed above), the claims require at least one
21 control unit that is connected to a plurality of antenna units, through an antenna switch unit.
22 Plaintiff, though conceding that a control instruction must come from a control unit to the
23 antenna switch unit, disputed the one-to-many relationship between a control unit and antenna
24 units, noting that the '888 Patent allows for a control unit to be connected to a single antenna unit

1 and that the “control instruction” does not go directly from the control unit to the antenna switch
2 unit but could go through other components.

3 Turning first to the claim language of Disputed Term 1, the Court agrees with Plaintiff
4 that Disputed Term 1, on its face, does not require a one-to-many relationship. The clear
5 language of Disputed Term 1 (“a control unit connected to each antenna unit”) simply requires
6 that every antenna unit have a control unit connected to it; it is silent as to the numerosity of
7 either component in the antenna unit–control unit relationship. The phrase does not say “*one*
8 control unit connected to *all* antenna units,” for example, or even “*a* control unit connected to *the*
9 antenna units,” but instead presents both the control unit and the antenna unit in singular form.
10 Notably, this is in contrast to the wording of Disputed Term 2 (“an antenna switch unit for
11 selectively driving the antenna units”), which facially contains a singular-to-plural relationship as
12 noted previously. *See Phillips*, 415 F.3d at 1314 (“Differences among claims can also be a useful
13 guide in understanding the meaning of particular claim terms.”).

14 The claim construction does not end there, however. Tellingly, Defendant’s arguments
15 rely on the interpretation of Disputed Term 2, not Disputed Term 1. “[T]he context in which a
16 term is used in the asserted claim can be highly instructive,” and “[o]ther claims of the patent in
17 question . . . can also be valuable sources of enlightenment as to the meaning of a claim term.”
18 *Phillips*, 415 F.3d at 1314. Here, as noted above, the Parties agree that the claims require an
19 antenna switch unit and that an antenna switch unit is connected to a plurality of antenna units.
20 The Parties also do not dispute that an antenna switch unit is connected to a control unit in some
21 fashion, however indirectly.⁹ This is also clear from the language of Disputed Term 2, which
22

23 ⁹ Plaintiff seemingly disputes the directness of the connection between a control unit and antenna switch unit,
24 pointing out at the Markman Hearing that other components may lie between a control unit and antenna switch unit
in the disclosed invention. But Plaintiff acknowledged that an antenna switch unit receives a control instruction from

1 provides that an antenna switch unit functions “in accordance with a control instruction *from the*
2 *control unit . . .*” (emphasis added). To pass on a control instruction from the control unit to the
3 antenna switch unit, it is clear that the two components must be connected in some way.

4 Accordingly, Disputed Term 2 requires the presence of a control unit that is connected to an
5 antenna switch unit that is, in turn, connected to a plurality of antenna units—and therefore,
6 Disputed Term 2 requires a control unit that is connected (albeit indirectly) to a plurality of
7 antenna units.

8 The specification supports this reading as well, by its consistent references to an antenna
9 switch unit’s connection to a control unit. *See, e.g.*, ’888 Patent 8:15–19 (“The reader/writer []
10 further includes an antenna switch unit [], the antenna switch unit [] selectively connects N
11 antenna units . . . to the transmission/reception unit [] under the control of the control unit . . .”);
12 *id.* 16:13–17 (“The control unit [] transmits a switch instruction to the antenna switch unit [] to
13 selectively drive the antenna units”); *id.* fig.16 (showing a control unit connected (through
14 an intermediary structure) to an antenna switch unit, which is in turn connected to multiple
15 antenna units). The prosecution history, in turn, shows that the patentee emphasized the existence
16 of the antenna switch unit (by adding the language of Disputed Term 2 to the claims) to
17 distinguish the patent application from prior art (Dkt. No. 39-1 at 55), lending further support to
18 the Parties’ agreement that the claims require the existence of an antenna switch unit.

19 Certainly, and as Defendant also acknowledges (Joint Brief at 17), the specification
20 contains certain figures that show a one-to-one relationship between a control unit and an
21 antenna unit. *See* ’888 Patent figs.1, 3, 22. As Plaintiff has noted, however, “[p]atent
22 specifications often omit certain components from diagrams for clarity,” and nothing in the ’888

23 _____
24 a control unit, and Defendant in turn did not dispute that other structures could stand between a control unit and
antenna switch unit, as long as there was some type of connection between the two.

1 Patent's specification rules out the (non-diagrammed) presence of an antenna switch unit or a
2 plurality of antenna units, both of which the Parties agree are required by the claims. *See* '888
3 Patent 7:8–8:10, 8:24–40, 21:35–23:19 (descriptions of Figures 1, 3, and 22 in specification). In
4 any case, the claim language is clear here, and it is ultimately “the claims of a patent [that] define
5 the invention to which the patentee is entitled the right to exclude.” *Phillips*, 415 F.3d at 1312
6 (quoting *Innova/Pure Water, Inc.*, 381 F.3d at 1115).

7 In essence, both Parties are correct: The '888 Patent requires the presence of a control
8 unit that is (perhaps indirectly) connected to an antenna switch unit that is connected to a
9 plurality of antenna units, but no alteration to Disputed Term 1 (nor any of the other Disputed
10 Terms) is required for this construction. Disputed Term 1 also does not exclude the existence of
11 other control units that are not connected to an antenna switch unit or are each only connected to
12 one antenna unit. But Disputed Term 2 requires at least one antenna switch unit that is connected
13 to both a control unit and a plurality of antenna units. Because this requirement is found in the
14 plain and ordinary language of Disputed Term 2, not Disputed Term 1, no further construction of
15 Disputed Term 1 is required.

16 * * *

17 Ultimately, the Parties agree on much of the substance of this claim construction dispute.
18 The Parties agree on the essence of Disputed Terms 1 and 2. In any case, the Court's
19 independent analysis confirms the agreed-on construction of the claims at issue, and Defendant's
20 alternative construction of Disputed Term 3 is easily rejected. Where “the ordinary meaning of
21 claim language as understood by a [POSITA] may be readily apparent[,] . . . claim construction
22 in such cases involves little more than the application of the widely accepted meaning of
23 commonly understood words.” *Phillips*, 415 F.3d at 1313. So it is here. The above-described
24 construction is consistent with the customary and ordinary meaning of the claim language (which

1 was neither re-defined nor clearly disavowed by the patentee) of the Disputed Terms, as well as
2 the other claims, specification, and prosecution history of the '888 Patent. Further, the Parties
3 have not put forth any extrinsic evidence of persuasive value, and in any case extrinsic evidence
4 is unnecessary where, as here, the intrinsic evidence suffices to understand the claims.

5 The Court has considered the Parties' other arguments and finds them unavailing or
6 moot.

7 IV. CONCLUSION

8 Accordingly, the Court CONSTRUES the disputed claim terms as follows:

- 9 (1) The term "a control unit connected to each antenna unit, for controlling each
10 antenna unit to sequentially change radiation characteristics of each antenna unit,"
11 which appears in Claims 1, 4, 7, and 10 of the '888 Patent, is accorded its plain
12 and ordinary meaning.
- 13 (2) The term "an antenna switch unit for selectively driving the antenna units in
14 accordance with a control instruction from the control unit to transmit the radio
15 wave having desired polarization directions according to each antenna unit by
16 switching the antenna units," which appears in Claims 1, 4, 7, and 10 of the '888
17 Patent, is accorded its plain and ordinary meaning.
- 18 (3) The term "an antenna switch unit," which appears in Claims 1, 4, 7, and 10 of the
19 '888 Patent is accorded its plain and ordinary meaning.

20 Dated this 19th day of August 2022.

21 

22 Tana Lin
23 United States District Judge
24